

CURRICULUM VITAE

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Academic History

- 2017 Ph.D. (Biology) The George Washington University, Washington, D.C.
2010 M.Sc. (Biology) Universidad Nacional Autónoma de México (UNAM). Mexico City, Mexico.
2006 B.Sc. (Biology) Instituto Politécnico Nacional (IPN), Mexico City, Mexico.

Publications

Peer reviewed articles

1. **Ballesteros, J.A.** & Hormiga, G. 2016. A new orthology assessment method for phylogenomic data: Unrooted Phylogenetic Orthology. *Molecular Biology and Evolution* 33(08): 2117-2134
2. Wang, F., **Ballesteros, J.A.**, Hormiga, G., Chesters, D., Zhan, Y., Sun, N., Zhu, C., Chen, W. & Tu, L. 2015. Resolving the phylogeny of a speciose spider group, the family Linyphiidae (Araneae). *Molecular Phylogenetics and Evolution* 91:135-149
3. Betancur-R R., Broughton R.E., Wiley E.O., Carpenter K., Lopez J.A., Li C., Holcroft N.I., Arcila D., Sanciangco M., Li J.C.C., Zhang F., Campbell M.A., **Ballesteros J.A.**, Roa-varon A., Willis S., Borden W.C., Hough D.J., Lu G. 2013. The Tree of Life and a New Classification of Bony Fishes. *PLOS Currents Tree of Life*. First Edition.
4. Betancur-R R., Li C., Munroe T. A, **Ballesteros J.A.**, Ortí G. 2013. Addressing Gene Tree Discordance and Non-Stationarity to Resolve a Multi-Locus Phylogeny of the Flatfishes (Teleostei: Pleuronectiformes). *Systematic Biology* 62:763-785
5. **Ballesteros, J.A.** and Francke, O.F. 2007. A new species of sun-spider from sand dunes in Coahuila, Mexico, (Arachnida: Solifugae: Eremobatidae). *Zootaxa* 1665:61-68

6. **Ballesteros, J.A.** and Francke, O.F. 2006. *Mastigoproctus lacandonensis*, especie nueva de vinagrillo (Thelyphonida, Arachnida) de la selva Lacandona, Chiapas, México. In: Estrada, V.E.G., Romero N., J., Equihua M., A., Luna L., C. and Rosas A., J. (eds), *Entomología Mexicana*. Manzanillo, Colima, vol. 5 (1), 156-160

Book chapters

1. Hormiga, G., **Ballesteros, J.A.** 2014. Chapter 26: Panarthropods: Arthropods and Their Closest Relatives. In: *The Tree of Life*. P. Vargas & R. Zardoya (eds.) Sinauer Associates, Inc. 305-314 pp.

Forthcoming

1. **Ballesteros, J.A.** and Hormiga, G. (*in revision*) Species delimitation of the orchard spider *Leucauge venusta* in North America (Araneae: Tetragnathidae). *Molecular Phylogenetics and Evolution*.
2. **Ballesteros, J.A.** and Hormiga, G. (*in preparation*) Molecular phylogeny of the genus *Leucauge* White. *Invertebrate Systematics*.
3. Santibáñez-López, C.E. Kriebel, R., **Ballesteros, J.A.**, Sharma, P.P. (*submitted*) 3D shape of venom molecules provides a synapomorphy for a large clade of scorpions. *Current Biology*.
4. Fernandez, R., Kallal, Robert J., Dimitrov, D. **Ballesteros, J.A.**, Arnedo, M.A., Giribet, G. & Hormiga, G. (*submitted*) Phylotranscriptomics, functional genomics and lineage diversification dynamics across the Spider Tree of Life. *PLoS Biology*.

Teaching Experience

- 2016 BiSc-1008 Understanding Organisms through service learning, The George Washington University (T.A.)
- 2011-2015 BiSc210. Analyzing combined datasets using T.N.T. Invited lecturer for graduate level introductory phylogenetics, including handouts and exercise. The George Washington University (instructor)
- 2014-2016 Introduction to Bioinformatics (summer). Special training for the Harlan undergraduate research program), The George Washington University (instructor).
- 2014 BiSc-2004 Invertebrate Zoology, The George Washington University (T.A.)
- 2010-2012 BiSc-1006 The Ecology and Evolution of Organisms (spring), The George Washington University (T.A.)
- 2010-2012 BiSc-1005 The Biology Nutrition and Health (fall), The George Washington University (T.A.)

Mentoring Experience

- 2015-2016 Maya Wolf. Understanding spider Evolution with novel genetic markers" B. Sci. Honor Thesis. Directed by Hormiga, G. and Ballesteros, J.A.

Editorial Services

Referee/reviewer: PeerJ, PLOS One, Zootaxa, Arachnologia

Congress Presentations

- 2016 Species delimitation of the orchard spider *Leucauge venusta* (Araneae, Tetragnathidae) in North America. International Congress of Arachnology, Golden, Colorado (oral presentation).
- 2016 When the leaf breaks: Unrooted Phylogenetic Orthology for Phylogenomics, Evolution meeting, Austin, Texas (oral presentation, Ernst Mayr Award Symposium)
- 2014 Comparative transcriptomics reveals orthologous loci for spider phylogenetics, Evolution meeting, Raleigh, North Carolina. (poster)
- 2013 You can't always get what you want: The phylogeny of Linyphiidae, Evolution meeting, Snowbird, Utah (poster)

Invited Talks & Guest Lectures

- 2017 The evolution of the chelicerate genome: Sorting out gene expansions in old radiations, Evolution Seminar Series, University of Wisconsin-Madison, Madison, Wisconsin.
- 2016 From 2 to 20 000 genes, a window into the evolutionary history of the orchard spider *Leucauge venusta*, Department of Biological Sciences Friday seminar series, The George Washington University, Washington, D.C.
- 2014 Comparative Transcriptomics and the Search of Homologous Loci for Spider Phylogenetics. Invited lecture Principles of Genomics (BIO-687), American University, Washington D. C.
- 2014 De Novo Assembly with Trinity. Bioinformatics Journal Club, Georgetown University, Washington, D.C.
- 2014 Base Composition Bias and Phylogenomics, Invited lecture, Molecular Phylogenetics Molecular Phylogenetics (BiSc 225), The George Washington University, Washington, D. C.

Research & Field Experience

- 2014 United States of America. Collected orchard-ppiders *L. venusta* and other orbweavers across a transect from Pennsylvania to Florida, west and east from the Appalachians.
- 2013 Costa Rica. Collected spiders for the project "Neotropical linyphiids of the subfamily Dubiaraneinae".
- 2012 Brazil. Aracnological Expedition into the Amazon rainforest.
- 2006-2010 Assistant collection manager of the orders Amblypygi, Uropygi and Solifugae of CNAN (National Arachnids Collection at IB-UNAM).

- 2007-2008 Mexico. Member of collecting expedition for scorpions and other arachnids in several states in Mexico (Michoacan, Oaxaca, Chihuahua, Durango, etc.)
- 2006 Mexico. Collected arachnids at the Lacandon Rainforest, Chiapas Mexico.

Outreach Activities

- 2016 Eight-legged Encounters. USA Science and Engineering Festival in Washington, D.C. April, 19. Exhibition volunteer, supervised by Dr. Eileen Hebets.
- 2014 The orchard-spider quest. Blogspot and field journal posted during the field work in SE USA. Photos: J.A. Ballesteros. Post authors: J.A. Ballesteros and R.J. Kallal. <http://theorchardspiderspiral.blogspot.com>

Computational Skills

Operating Systems

MacOS, Linux (Fedora, OpenSuse, Red Hat Linux Enterprise, Debian).

Bioinformatics and phylogenetics

RAxML, MrBayes, Beast, TNT, bowtie, blast+, Trinity, gmap, samtools, p4, Trinity, IGV, jModelTest, emboss, etc.

Programming and scripting languages

C (basic), Haskell (basic), R (intermediate), Python (advanced), bash (advanced).

Others

GRASS, QGis, LaTeX, mySQL, SQLite, HTML, CSS, JavaScript.